

PATENT SPECIFICATION

1,124,370

DRAWINGS ATTACHED.

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COMPLETE SPECIFICATION.

Wiring Duct for Insulated Conductors.

We, THE THOMAS & BETTS Co., a corporation organized under the laws of the State of New Jersey, United States of America, of 36 Butler Street, Elizabeth, New Jersey, United States of America, do hereby declare the invention, for which we pray that a patent may be granted to us, and the method by which it is to be performed, to be particularly described in and by the following statement:—

The present invention relates in general to conduits for insulated electrical conductors and is more specifically concerned with a wiring duct comprising an elongated member of substantially U-shape in cross-section having a base portion and side portions.

According to the present invention, there is provided a wiring duct comprising an elongated member of substantially U-shape in cross-section having a base portion and side portions, wherein the opposite ends of the base portion each present integral therewith hermaphroditic connecting elements, whereby a plurality of elongated members may be interconnected in precise end-to-end alignment.

In this way, it is possible to provide wiring duct sections of predetermined size and length which may be assembled in linear and/or angular relation with facility and dispatch. Furthermore, there may be constructed a wiring duct of predetermined length which precludes waste in assembling a "run" thereof because the novel connecting elements integral with its opposite ends permit the use of a portion of a wiring duct, as in a corner, the cut end of said portion being mitred, for example, to abutt a similar end portion.

A further feature of the invention is the provision of wiring duct sections which provide for wiring "break-outs" or branches laterally thereof while protecting the in-

ulated wiring against abrasion or damage by reason of the rounded margins of said sections.

The wiring duct sections according to the invention require only a minimum of retention or supporting means for securing an assembled run thereof on a fixed surface.

For a better understanding of the invention, and to show how the same may be carried into effect, reference will now be made by way of example to a specific embodiment thereof, when taken in connection with the accompanying drawings, in which:—

Figure 1 is a top plan view of a length of wiring duct with its opposite end portions formed to present hermaphroditic connecting elements integral therewith;

Figure 2 is a side elevation of the wiring duct;

Figure 3 is an end view of the wiring duct;

Figure 4 is a fragmentary plan view showing the manner in which linear runs of wiring duct sections are connected in angular end to end relation;

Figure 5 is a fragmentary perspective view of one end of each of a pair of wiring duct sections in spaced end to end relation showing the hermaphroditic connecting elements integral therewith, as seen from one side and above;

Figure 6 is a similar fragmentary perspective view of one end of each of a pair of wiring duct sections in spaced end to end relation showing the hermaphroditic connecting elements as seen from one side and below.

Referring to the drawings, Figures 1, 2 and 3 show a wiring duct section 10, moulded of approved plastics material for example, having a U-shaped configuration in cross-section presenting a flat bottom or base portion 12 with side portions 14 in the

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form of spaced, parallel rows of tines 16 having rounded edges, with the free end portions of each row thereof curved inwardly to form a conductor retaining arch 18. The tines in each row are connected in pairs at their free ends by inverted hook-like integral end portions 20 disposed normal thereto. The hook-like portions 20 are in spaced alignment and are shaped to receive a complementary closure strip 22 for the wiring duct section 10. When in position, the closure strip 22 is in yieldable snap-action engagement with the hook-like end portions 20 of said tines.

The flat bottom or base portion 12 of each wiring duct section 10 is formed with countersunk openings 23 for the reception of flat head mounting screws, not shown, and one or more elongated slots 24 (see Figures 5 and 6) adjacent said openings 23 whereby each duct section 10 is adapted to be shifted endwise relative to a fixed mounting surface or other support.

As best shown in Figures 5 and 6 the flat bottom or base portion 12 of each duct section 10 is provided at both ends, for example by moulding, with a plurality of cavities 26 and complementary projections 28 respectively in and on said opposite ends of the flat bottom or base portions. At each end, two of the cavities 26 and two of the projections 28 are in one plane, and the other two cavities and projections are in another plane parallel with the first. One of the projections 28 at each of said opposite ends presents a plurality of small saw-teeth 30 along one edge face thereof whereby when the duct section end portions 32 and 34, shown in Figure 5, are brought together, the cavities 26 and projections 28 will be inter-related, including the saw teeth 30, into a close fitting relationship and at the same time prevent relative movement between the connected sections either laterally or endwise.

From the foregoing description it will be clear that the invention residing in the hermaphroditic coupling or connecting elements 26 and 28 moulded in and on the opposite end portions of each duct section 10 makes it possible to secure many such sections in perfect alignment and in secure relation against relative lateral or endwise shift therebetween. Moreover, the provision of hermaphroditic coupling or connecting elements 26 and 28, for example, on the opposite end portions of wiring duct sections 10, as described, precludes waste of portions of such sections since the smallest pieces of such sections, left over from a previous assembly, are utilizable in the corners of angular assemblies. This is best shown in Figure 4 where one severed end of a partial duct section 10 is mitred for angular abutment with a similarly mitred piece of

duct section 10, the hermaphroditic coupling elements 26 and 28 on the opposite end of such severed end pieces of full length duct sections 10 make the use thereof in the assembly of a "run" thereof not only possible but highly economical.

While the duct sections 10 have been described as moulded of a suitable plastics material, it is to be expressly understood that the duct sections 10 may also be fabricated of suitable sheet metal wherein the hermaphroditic elements 26 and 28 are die-formed and struck out of the plane of the metal into parallel planes. Alternatively, the duct sections 10 may be stamped from thin metal and two or more stampings assembled in super imposed or laminated relation and spot welded together after each of such stampings has had either the cavities 26 or the projections 28 formed therein or thereon whereby they will, when assembled, be disposed in different parallel planes.

WHAT WE CLAIM IS:—

1. A wiring duct comprising an elongated member of substantially U-shape in cross-section having a base portion and side portions, wherein the opposite ends of the base portion each present integral therewith hermaphroditic connecting elements, whereby a plurality of elongated members may be interconnected in precise end-to-end alignment.
2. A wiring duct according to claim 1, wherein at each end of the base portion the connecting elements are divided into two groups located in transverse parallel planes.
3. A wiring duct according to claim 2, wherein the groups of connecting elements are located in or on the upper side and the lower side of the base portion.
4. A wiring duct according to any preceding claim, wherein the opposite ends of the base portion extend slightly beyond the side portions of said U-shaped member and present the connecting elements.
5. A wiring duct according to any preceding claim, wherein the connecting elements include a complementary locking means whereby a plurality of said elongated members are adapted to be interconnected in precise alignment and locked against relative lateral end-wise movement.
6. A wiring duct according to claim 5, wherein said locking means comprises a plurality of complementary saw teeth along one edge of the connecting elements.
7. A wiring duct according to any preceding claim, wherein the side portions of said U-shaped member are constituted by two rows of spaced interconnected pairs of tines curved toward each other adjacent their free ends to form a conductor retaining arch therebetween.
8. A wiring duct according to claim 7,

wherein each pair of said tines in each row terminates at their free ends in an inverted hook-like member for the reception of a flat complementary closure strip thereon in snap-action engagement with said hook-like members.

9. A wiring duct according to any preceding claim, wherein the connecting elements are formed by complementary projections and cavities.

10. A wiring duct according to any preceding claim, moulded in plastics material.

11. A wiring duct according to claim 10,

wherein the plastics material is an insulator.

12. A wiring duct substantially as hereinbefore described with reference to the accompanying drawings.

ELKINGTON & FIFE,
Chartered Patent Agents,
High Holborn House,
52-54 High Holborn,
London, W.C.1.
Agents for the Applicants.

Fig. 1

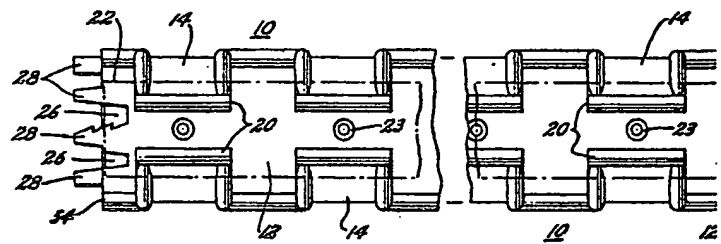


Fig. 2

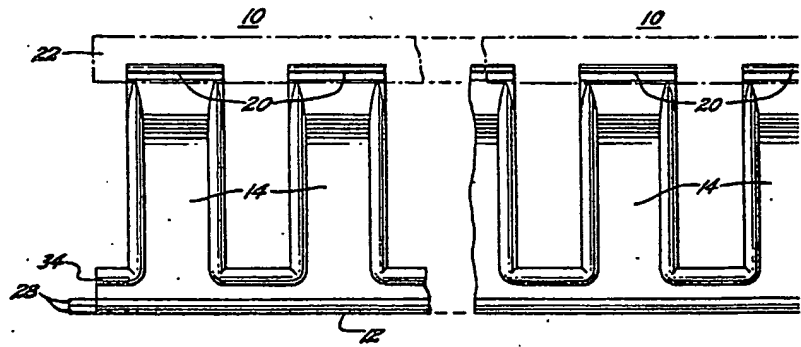


Fig. 3

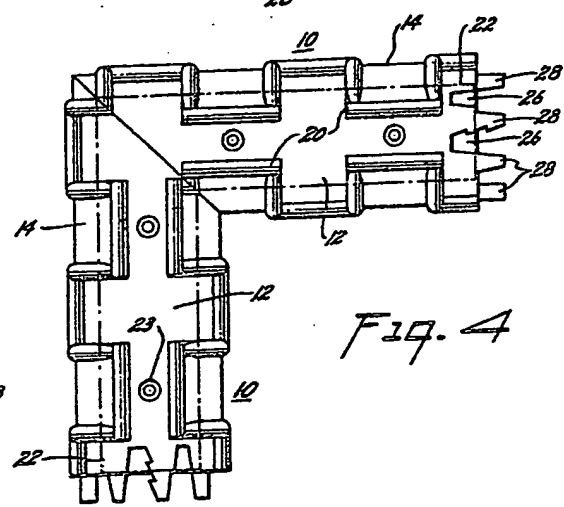
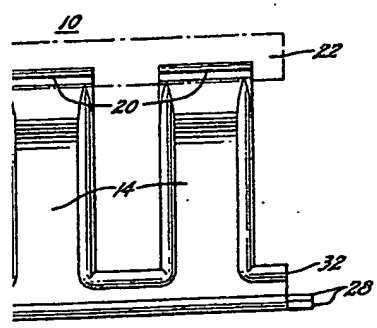
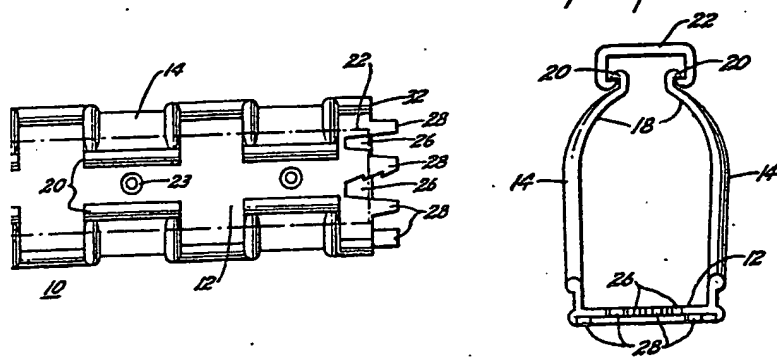


Fig. 4

Fig. 1

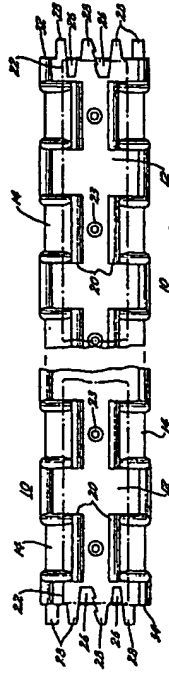


Fig. 3

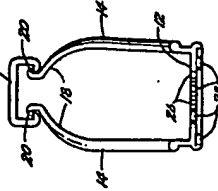


Fig. 2

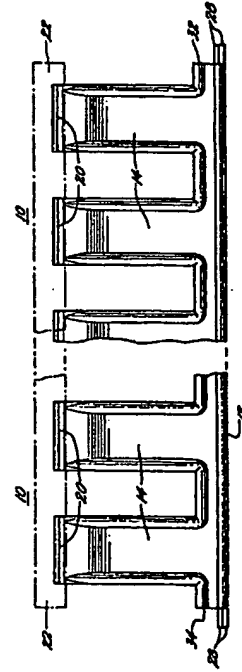


Fig. 4

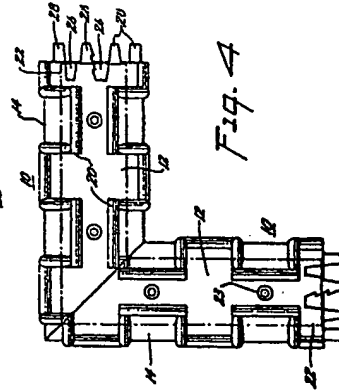
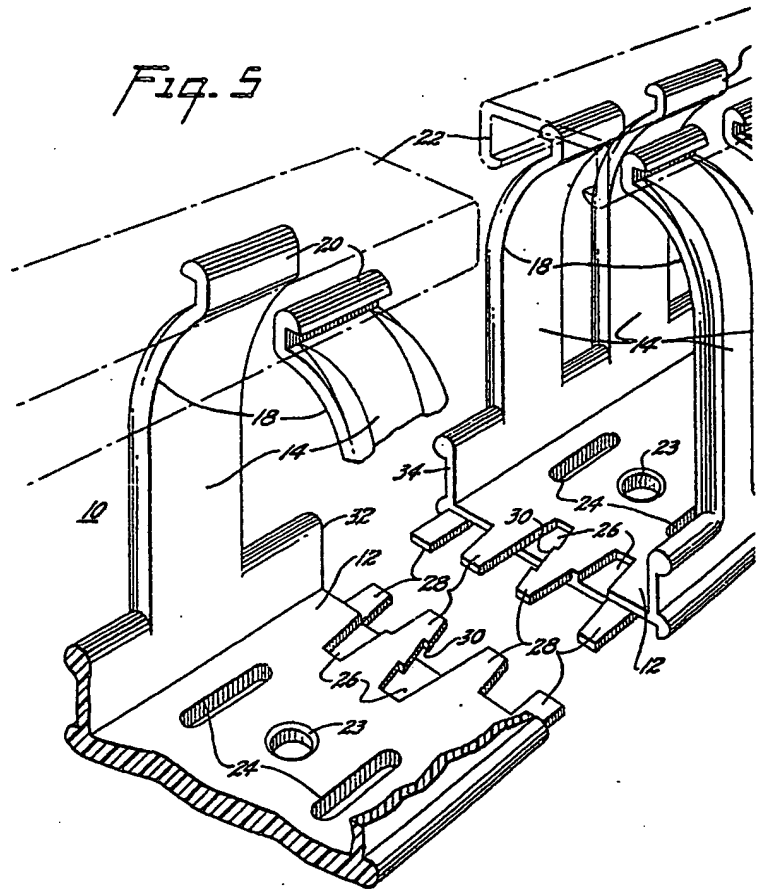


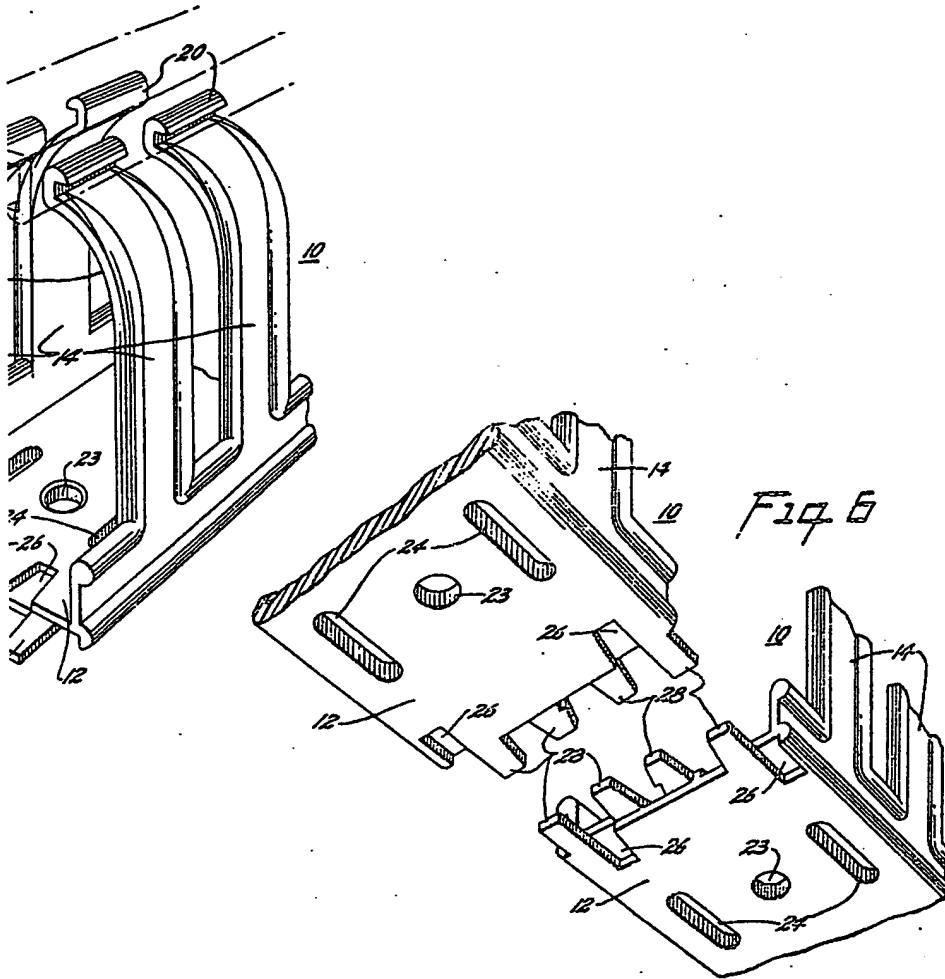
Fig. 5

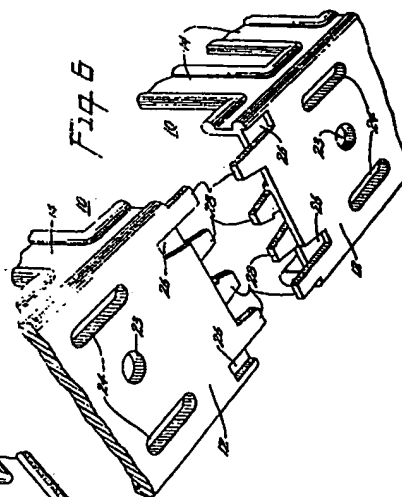
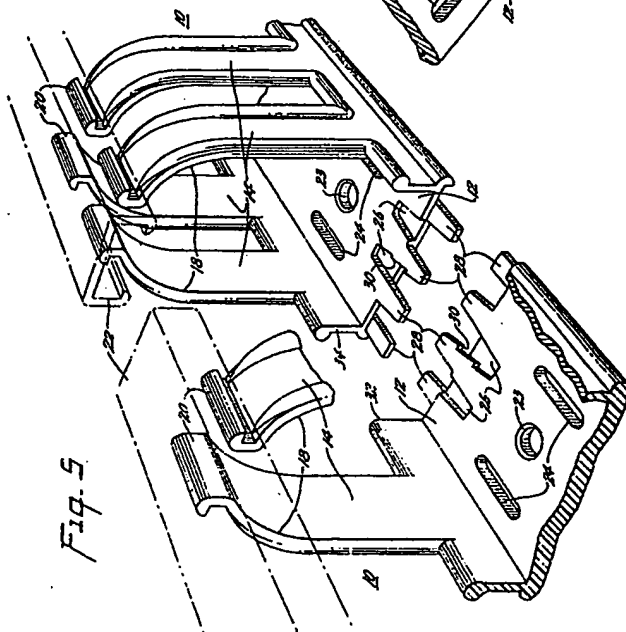


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2 SHEETS

*This drawing is a reproduction of
the Original on a reduced scale
Sheet 2*





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